Where We’ve Been and Where We Are
Implications for Diversity in Computing

Michael S. Kirkpatrick
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CAPWIC 2017
You belong in Computer Science and it’s a great place to be
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Uber Will Investigate Sexual Harassment Claims By Engineer

February 20, 2017 · 1:43 PM ET
A culture problem?

• Strip show at Black Hat
• RSA Conference “booth babes”
• Julie Ann Horvath’s departure
• Brogrammer culture
• Sarah Sharp vs. Linus Torvalds
• Ellen Pao vs. Kleiner Perkins
• Tropes vs. Women
• Whitney Wolfe as Tinder co-founder
• #gamergate
A culture problem?

“It's difficult to even get a modicum of respect. They talk down to you. They belittle you.”

“It is not misogyny to tell a sexist joke, or to fail to take a woman seriously…”

“I’m honestly trying to understand why anyone says that females are ‘needed’ in the tech industry. The tech community works fine without females, just like any other mostly male industry. Feminists probably just want women making more money.”

“This is an industry filled with sociopaths who cannot see another individual as a human being.”

Having a woman on the board “makes the company seem like a joke.”
A culture problem?

The leaky pipeline:

“The pipeline is leaky and full of acid. The pipeline leads to a sewage treatment plant. The pipeline ends in a meat grinder.”

-Julie Pagano*

*Diversity for Sale (http://juliepagano.com/blog/2015/02/07/diversity-for-sale/)
Computer Science is...

the systematic study of the **feasibility, structure, expression, and mechanization** of the methodical procedures (or algorithms) that underlie the acquisition, representation, processing, storage, communication of, and access to **information**.
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Top 10 Best Jobs in America 2017*

1. Mobile Applications Developer
2. Risk Management Director
3. Landman
4. Product Analyst
5. Information Assurance Analyst
6. Quality Assurance Coordinator (RN)
7. Clinical Applications Specialist
8. Hospital Administrator
9. Database Analyst
10. Finance & Administration Director

*CNN Money (http://money.cnn.com/pf/best-jobs/2017/list/)
Computer Science is...

collaborative

beneficial to society

fun and interesting

…and it should reflect society
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Barbara Liskov’s work is critical for OOP

Frances Allen made optimizing compilers possible

Radia Perlman invented key parts of the Internet

Margaret Hamilton’s code saved the first moon landing

Ada Lovelace wrote the world’s first computer program

Hedi Lamarr’s invention made Bluetooth possible

Grace Hopper...
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http://ncwit.org/
1980s: The “Golden Age”
1980s: The “Golden Age”

Level playing field?
2000s: Dot-com boom and bust
The Third Surge
The Third Surge

“One category of reactions that I receive all the time as a programmer that presents as feminine is: No one believes I am a programmer. I can’t tell you how many people, when meeting me and hearing my profession, tell me that I look like a designer, someone in accounting, someone in marketing, anything but a programmer.”
Girls’ choices are constrained

- **Steered away** by parents, teachers, others
  - “Computing is for boys”
- Underrepresentation is a vicious cycle
  - Lack of role models
- Girls systematically **underestimate** their abilities
  - Accurate feedback is critical
- Girls anticipate **work-family** conflicts
- Discrimination limits opportunities
- **Punished** for exhibiting competence

It's important we get over the idea that you were born to be a programmer - Jan Cuny

#SIGCSE2016
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ane @lordvoldemot

@EmWatson my dad says I can't be an engineer 'cause it's a "men profession" what do I do to change that? #Heforshe @HeforShe #Davos
ane @lordvoldemot

@EmWatson my dad says I can't be an engineer 'cause it's a "men profession" what do I do to change that? #Heforshe @HeforShe #Davos

Emma Watson @EmWatson

@lordvoldemot @HeforShe Become an engineer.

6:29 AM - 23 Jan 2015

7,957 RETWEETS 12,356 FAVORITES
Thank you!
Where to go for more information

- National Council for Women & Information Technology (http://www.ncwit.org/)
- ACM’s Women in Computing (ACM-W) (http://women.acm.org/)
- CS10K Project (http://cs10kcommunity.org/)
- Code.org (http://code.org/)
- Anita Borg Institute (http://anitaborg.org/)
- Girls Who Code (http://girlswhocode.com/)
- Black Girls Code (http://blackgirlscode.com/)
- Model View Culture (https://modelviewculture.com/)
- Learn to write Python code:
  - http://learnpython.org/
Where to go for more information

- Alice (http://alice.org/)
- AppInventor (http://appinventor.mit.edu/)
- Computer Science Unplugged (http://csunplugged.org/)
- Finch Robots (http://finchrobot.com/)
- Lightbot (http://lightbot.com/)
- Scratch (http://scratch.mit.edu/)
- Snap! (Build Your Own Blocks) (http://snap.berkeley.edu/)
- Girl Develop It (https://www.girldevelopit.com/)
- TEALS (https://www.tealsk12.org/)
- Bootstrap (http://www.bootstrapworld.org/)
- Code 2040 (http://www.code2040.org/)
- ScriptEd (https://scripted.org/)
Recommendations